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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
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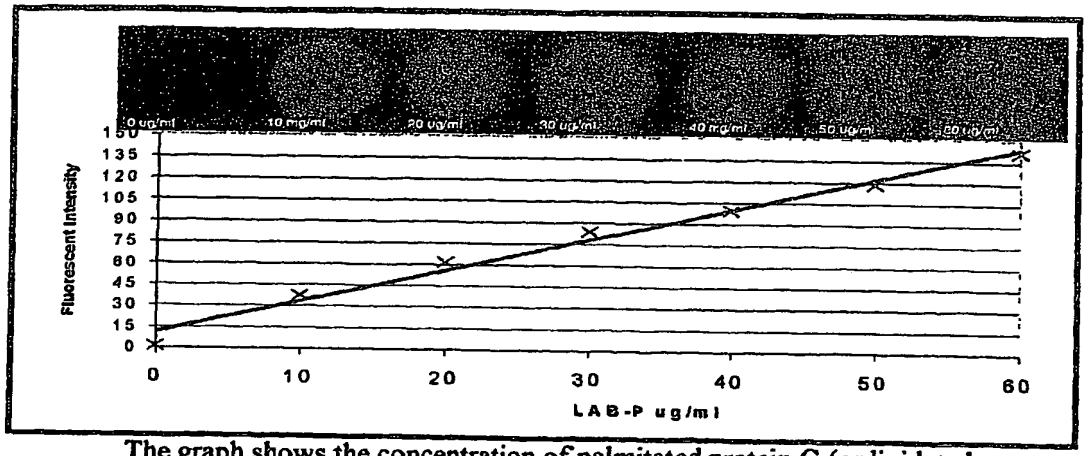
(88) Date of publication of the international search report:
27 January 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CELL TARGETING METHODS AND COMPOSITIONS



The graph shows the concentration of palmitated protein G (or lipidated antibody binding protein [LAB-P]) on the x-axis and the relative fluorescent intensity in arbitrary units on the y-axis. The insert shows fluorescent micrographs of representative cells coated with PPG at the indicated concentrations.

(57) Abstract: In certain aspects, the invention relates to cell delivery compositions comprising a progenitor cell and a targeting moiety, and methods related thereto. Such compositions and methods may be used, for example, in administering a targeted cell therapy to a subject.

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N5/00 C12N5/06 A61K45/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 03/106640 A (COHEN NIR ; UNIV CASE WESTERN RESERVE (US); CAPLAN ARNOLD I (US); DENN) 24 December 2003 (2003-12-24) the whole document	1-7, 11-14, 26,27, 29-33, 35,37, 39,40
Y	CAPLAN A I ET AL: "MESENCHYMAL STEM CELLS: BUILDING BLOCKS FOR MOLECULAR MEDICINE IN THE 21ST CENTURY" TRENDS IN MOLECULAR MEDICINE, XX, XX, vol. 7, no. 6, June 2001 (2001-06), pages 259-264, XP001156351 page 262, left-hand column	1-42
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
3 September 2004	10/11/2004
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	**Authorized officer** Vogt, T

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00/23570 A (BISYS B V U) 27 April 2000 (2000-04-27) the whole document	1-42
A	KIM S A ET AL: "THE USE OF PALMITATE-CONJUGATED PROTEIN A FOR COATING CELLS WITH ARTIFICIAL RECEPTORS WHICH FACILITATE INTERCELLULAR INTERACTIONS" JOURNAL OF IMMUNOLOGICAL METHODS, ELSEVIER SCIENCE PUBLISHERS B.V.,AMSTERDAM, NL, vol. 158, 1993, pages 57-65, XP002940258 ISSN: 0022-1759 the whole document	
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P,A	US 2003/149235 A1 (BAKER ANDREW HOWARD ET AL) 7 August 2003 (2003-08-07) the whole document	
A	WO 02/090985 A (MIHARA HISAKAZU ; NOKIHARA KIYOSHI (JP)) 14 November 2002 (2002-11-14) the whole document	
A	WO 03/009881 A (IMARX THERAPEUTICS INC) 6 February 2003 (2003-02-06) the whole document	
A	WO 02/20722 A (PASQUALINI RENATA ; ARAP WADIH (US); UNIV TEXAS (US)) 14 March 2002 (2002-03-14) the whole document	
A	WO 01/92549 A (ROELVINK PETRUS W ; EINFELD DAVID (US); GENVEC INC (US); KOVESDI IMRE) 6 December 2001 (2001-12-06) the whole document	
A	WO 99/46284 A (BURNHAM INST) 16 September 1999 (1999-09-16) the whole document	
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INTERNATIONAL SEARCH REPORT

Int ial Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	TREPEL MARTIN ET AL: "Molecular adaptors for vascular-targeted adenoviral gene delivery" HUMAN GENE THERAPY, vol. 11, no. 14, 20 September 2001 (2001-09-20), pages 1971-1981, XP001182897 ISSN: 1043-0342 the whole document	
A	SAMOYLOV A M ET AL: "Recognition of cell-specific binding of phage display derived peptides using an acoustic wave sensor" BIOMOLECULAR ENGINEERING, ELSEVIER, NEW YORK, NY, US, vol. 18, no. 6, February 2002 (2002-02), pages 269-272, XP004336425 ISSN: 1389-0344 the whole document	
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itional application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.: 43-89, 90-95, 142-189
because they relate to subject matter not required to be searched by this Authority, namely:

see FURTHER INFORMATION sheet PCT/ISA/210

2. [ ] Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. [ ] Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III *Observations where unity of invention is lacking* (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. [ ] As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest.

[ ] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 43-89, 90-95, 142-189

Claims 43-89 relate to a method of delivering a progenitor cell, comprising administrating said progenitor cell to a subject.
Claims 90-95 relate to a method of treating a disease, comprising delivering the progenitor cell to a target tissue.
Claims 142-189 relate to a method of delivering a scaffold graft in a target tissue, comprising implanting said scaffold graft.
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy.

INTERNATIONAL SEARCH REPORT

Int[illegible]ial Application No
PC[illegible]/US2004/008763

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